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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,288	08/06/2001	Hubert T. McGovern	OMG/129/US	9047

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EXAMINER

SCHIFFMAN, JORI

ART UNIT

PAPER NUMBER

3679

DATE MAILED: 03/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/923,288

Applicant(s)

MCGOVERN ET AL.

Examiner

Jori R. Schiffman

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-32, 34-42, 44-48, 50-55, 57-64, 66-97, 99-104, 106-110, 113 and 119 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 09 December 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**Continuation of Disposition of Claims:** Claims pending in the application are 1-8,10-32,34-42,44-48,50-55,57-64,66-97,99-104,106-110,113 and 119.

## **DETAILED ACTION**

### ***Drawings***

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on December 9, 2002 have been approved by the examiner. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

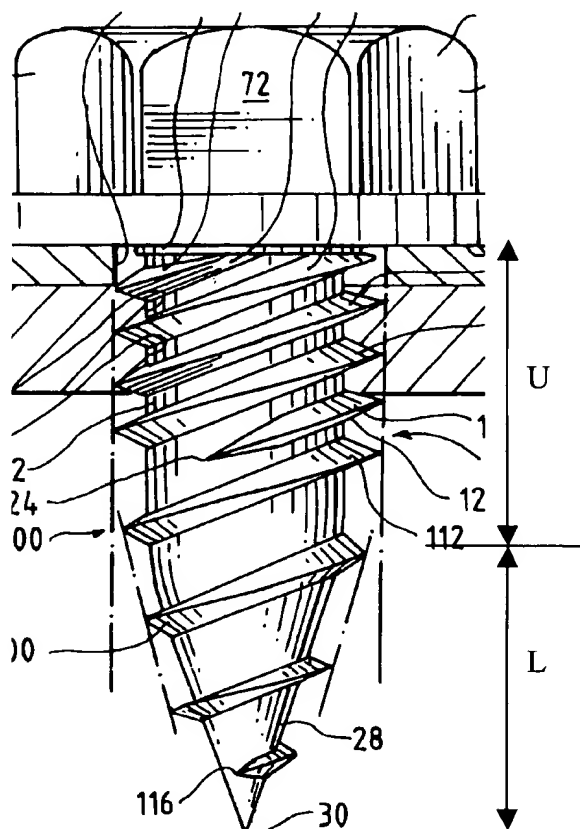
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 12, 13, 20, 23, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Hsing (US 6045312).

Regarding the claims, Hsing discloses a screw shaft and head, the head provided with a top surface 72 being able to receive a tool, the shaft provided with a threaded upper region 120, which refers to the entire upper region of the shaft (also labeled as U on the Figure below), located proximate the head and a threaded lower region 100, which refers to the entire lower region of the shaft (also labeled as L on the Figure below), near a distal end of the screw, the distal end having a tip 30, the cross sectional area of the shaft in the upper region being greater than that of the shaft in the lower region, and the

number of threads per unit length in the upper region being at least twice the number of threads per unit length in the lower region. Hsing further discloses the thread pattern of the lower region being symmetrical.



***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1, 3-8, 11, 45, 46, 51-53, 55, 58-62, 64, and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takasaki (6000892) in view of Hsing (US 6045312).

Regarding the claims, Takasaki discloses a screw shaft and head, the head provided with a top surface 2 being able to receive a tool, a bottom surface having a v-shaped undercut 7, the undercut having a conical surface that connects the lip with a conical side of the head, a crown that extends around the perimeter of the head and extends beyond the lower surface of the head thereby defining an open volume between the lower edge of the crown and the shaft of the screw and forming a recessed region between the lower edge of the crown and the shaft of the screw, the shaft provided with a threaded upper region 5 located proximate the head and a threaded lower region 4 near a distal end of the screw, the distal end having a tip 3, and the number of threads per unit length in the upper region exceeding the number of threads per unit length in the lower region. Takasaki further discloses the thread pattern of the lower region being symmetrical, and the tip being a gimlet tip having an included angle from about 20° to about 30° (col. 2, l. 17-18). Takasaki also discloses the conical surface of the v-shaped undercut slanting away from the lip toward the axis of the shaft at an angle of approximately 45°. Takasaki fails to disclose the shaft having a cross sectional area in the upper region greater than the cross sectional area of the shaft in the lower region and the upper region having twice as many threads per unit length than the lower region. Hsing teaches a shaft having a greater cross sectional area in the upper region 120, which refers to the entire upper region of the shank (also labeled as U on the Figure above), than the cross sectional area of the shaft in the lower region 100, which refers to the entire

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lower region of the shank (also labeled as L on the Figure above), and the upper region having twice as many threads per unit length than the lower region. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to provide the upper region of the shank with a greater cross sectional area than the lower region of the shank and provide the upper region of Takasaki's screw with twice as many threads as the lower region as disclosed in Hsing so less torque is required to install the screw (col. 4, l. 55-56).

6. Claims 10, 21, 31, 34, 35, 42, 50, 57, 66, 68, 80, 94, and 106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing (US 6045312) as applied to claims 1, 12, and 23 above, and further in view of De Caro (US 4959938).

Hsing discloses the claimed screw as above, but fails to disclose the upper region having an inverted buttress thread configuration. De Caro teaches a screw having an upper region with an inverted buttress configuration to secure the screw into the surface. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify Hsing's screw so the upper region had a buttress thread as disclosed in De Caro to better secure the screw into the surface so it is less likely to rotate, and therefore less likely to loosen.

7. Claims 50, 57, and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takasaki (US 6000892) in view of Hsing (US 6045312) as applied to claims 45, 52, and 59 above, and further in view of De Caro (US 4959938).

Modified Takasaki fails to disclose the upper region having an inverted buttress thread configuration. De Caro teaches a screw having an upper region with an inverted

buttress configuration to secure the screw into the surface. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify Takasaki's screw so the upper region had a buttress thread as disclosed in De Caro to better secure the screw into the surface so it is less likely to rotate, and therefore less likely to loosen.

8. Claims 14-18, 22, 24-28 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing (US 6045312) as applied to claims 12 and 23 above, and further in view of Takasaki (US 6000892).

Hsing fails to disclose a bottom surface having a v-shaped undercut, the undercut having a conical surface that connects the lip with a conical side of the head, a crown that extends around the perimeter of the head and extends beyond the lower surface of the head thereby defining an open volume between the lower edge of the crown and the shaft of the screw and forming a recessed region between the lower edge of the crown and the shaft of the screw. Hsing further fails to disclose the conical surface slanting away from the lip toward the shaft at approximately 45° and the tip having an angle from about 20° to 30°. Takasaki teaches all of these features of the head and the smaller tip angle in order to smoothly penetrate into the member and suppress bulging on the surface of a material molded from a mixture of plastic waste and wood chips (col. 2, l. 42-47 and col. 3, l. 15-17). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to add these features to the head and the tip of Hsing's screw as disclosed in Takasaki in order to suppress any bulging on the surface, keeping the surface smooth where the screw has been inserted.



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9. Claims 19 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing (US 6045312) as applied to claims 12 and 23 above, and further in view of Dreger (US 5020954).

Hsing fails to disclose the top surface of the head being provided with a square opening. Dreger teaches a screw with a head having a square opening for accommodating a Robertson driver (col. 5, l. 35). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify Hsing's screw by adding a square opening to the head as disclosed in Dreger so it can be optimally installed or removed by a Robertson driver as described in Dreger.

10. Claims 47, 54, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takasaki (US 6000892) in view of Hsing (US 6045312) as applied to claims 45, 52, and 59 above, and further in view of Dreger (US 5020954).

Modified Takasaki fails to disclose the top surface of the head being provided with a square opening. Dreger teaches a screw with a head having a square opening for accommodating a Robertson driver (col. 5, l. 35). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify Takasaki's screw by adding a square opening to the head as disclosed in Dreger so it can be optimally installed or removed by a Robertson driver as described in Dreger.

11. Claims 36-40, 44, 69-73, 81-86, 93, 95-97, 99, 107-110, and 119 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing (US 6045312) and De Caro (US 4959938) as applied to claims 34, 68, and 94 above, and further in view of Takasaki (US 6000892).

Hsing modified by De Caro discloses the claimed screw as above, but fails to disclose a bottom surface having a v-shaped undercut, the undercut having a conical surface that connects the lip with a conical side of the head, a crown that extends around the perimeter of the head and extends beyond the lower surface of the head thereby defining an open volume between the lower edge of the crown and the shaft of the screw and forming a recessed region between the lower edge of the crown and the shaft of the screw. Hsing further fails to disclose the conical surface slanting away from the lip toward the shaft at approximately  $45^\circ$  and the tip having an angle from about  $20^\circ$  to  $30^\circ$ . Takasaki teaches all of these features of the head and the smaller tip angle in order to smoothly penetrate into the member and suppress bulging on the surface of a material molded from a mixture of plastic waste and wood chips (col. 2, l. 42-47 and col. 3, l. 15-17). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to add these features to the head and the tip of Hsing's screw as modified by De Caro as disclosed in Takasaki in order to suppress any bulging on the surface, keeping the surface smooth where the screw has been inserted.

12. Claims 41, 74, and 100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing (US 6045312) and De Caro (US 4959938) as applied to claims 34, 68, and 94 above, and further in view of Dreger (US 5020954).

Hsing modified by De Caro discloses the claimed screw as above, but fails to disclose the top surface of the head being provided with a square opening. Dreger teaches a screw with a head having a square opening for accommodating a Robertson driver (col. 5, l. 35). It would have been obvious at the time the invention was made to a

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person of ordinary skill in the art to modify Hsing's screw as modified by De Caro by adding a square opening to the head as disclosed in Dreger so it can be optimally installed or removed by a Robertson driver as described in Dreger.

13. Claims 75-79, 88-92, and 101-104 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing (US 6045312), De Caro (US 4959938), and Takasaki (US 6000892) as applied to claims 34, 36-40, 68-73, 81-86, and 93-99 above, and further in view of Dreger (US 5020954).

Hsing modified by De Caro and Takasaki discloses the claimed screw as above, but fails to disclose the top surface of the head being provided with a square opening. Dreger teaches a screw with a head having a square opening for accommodating a Robertson driver (col. 5, l. 35). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify Hsing's screw as modified by De Caro and Takasaki by adding a square opening to the head as disclosed in Dreger so it can be optimally installed or removed by a Robertson driver as described in Dreger.

14. Claims 87 and 113 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing (US 6045312), De Caro (US 4959938), and Dreger (US 5020954) as applied to claims 74 and 100 above, and further in view of Takasaki (US 6000892).

Hsing modified by De Caro and Dreger discloses the claimed screw as above, but fails to disclose the tip having an angle from about 20° to 30°. Takasaki teaches the smaller tip angle in order to smoothly penetrate into the member and suppress bulging on the surface of a material molded from a mixture of plastic waste and wood chips (col. 2, l. 42-47). It would have been obvious at the time the invention was made to a person of

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ordinary skill in the art to add these features to the head and the tip of Hsing's screw as modified by De Caro and Dreger as disclosed in Takasaki in order to suppress any bulging on the surface, keeping the surface smooth where the screw has been inserted.

### ***Response to Arguments***

15. Applicant argues that Hsing fails to disclose "a shaft with a cross sectional area in the upper region greater than the cross sectional area of the shaft in the lower region". The examiner respectfully disagrees. Although Hsing discloses shank 22 being "generally cylindrical", this is only referring to the upper region of the shank. Both the cylindrical portion 22 (also labeled as U on the figure above) and lower tapered portion 28 (also labeled as L on the Figure above) are considered to make up the entire shank of the screw. This lower tapered region 28 (or L) clearly has a smaller cross sectional area at any given point than the cross sectional area of upper region 22 (or U) and therefore reads on the claimed screw. The rejection is therefore deemed proper and is maintained.

16. Applicants other arguments have been considered but they are all based upon the main argument that Hsing fails to disclose "a shaft with a cross sectional area in the upper region greater than the cross sectional area of the shaft in the lower region". As discussed above, this argument is not persuasive and the examiner respectfully disagrees. Therefore all other rejections are maintained.

***Conclusion***

17. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jori R. Schiffman whose telephone number is 703-305-4805. The examiner can normally be reached on M-Th, and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on 703-308-1159. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

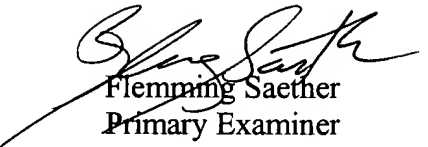
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-3179.

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Jori R. Schiffman  
Examiner  
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JS  
March 7, 2003

  
Flemming Saether  
Primary Examiner